OCCUPATIONAL INJURIES AND DISEASES IN ALBERTA

Lost-Time Claims, Disabling Injury Claims and Claim Rates

Upstream Oil and Gas Industries 2006 to 2010

WORK SAFE ALBERTA

Summer 2011

Government of Alberta

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HIGHLIGHTS

The lost-time claim rate remained the same.

- The 2010 lost-time claim rate for the Upstream Oil and Gas industries remained at 0.50 per 100 person-years worked. The average lost-time claim rate for all sectors in the province was 1.41 per 100 person-years worked.
- The disabling injury rate increased by 8.5% in 2010, to 1.72 per 100 person-years worked, from 1.59 in 2009. The average disabling injury rate for all sectors in the province was 2.67 per 100 person-years worked.
- The increase in the disabling injury rate for the Upstream Oil and Gas industries in 2010 was the result of an increase in the number of injury claims. The number of disabling injury claims increased by 12.4% from 2,485 in 2009 to 2,805 in 2010. The person-years worked estimates increased by 3.6% from 156,976 to 162,678 for the same period.
- Since 2006, the lost-time claim rate for the Upstream Oil and Gas industries decreased by 49.5% and the disabling injury rate decreased by 49.0%.

Large employers experienced the lowest injury rates.

- Employers with 10 to 19 person-years worked had the highest lost-time claim rate in 2010, at 1.25 per 100 person-years worked. Employers with 100 or more person-years worked had the lowest rate, 0.34.
- Employers with 20 to 39 person-years worked had the highest disabling injury at 2.25 per 100 person-years worked, followed by employers with 10 to 19 person-years worked, 2.20. Employers with more than 100 person-years worked had a disabling injury rate almost four times higher than their lost-time claim rate.

The Petroleum Producers/Exploration sub-sector had the lowest injury rates.

- Lost-time claim and disabling injury rates decreased in three Upstream Oil and Gas industries: the Petroleum Producers/Exploration sub-sector; the Oilfield Maintenance and Construction sub-sector; and the Oil Sands sub-sector.
- The Petroleum Producers/Exploration sub-sector had the lowest lost-time claim rate at 0.13 per 100 person-years worked. The Oilfield Trucking Services sub-sector had the highest at 1.55 per 100 person-years worked.
- The Petroleum Producers/Exploration sub-sector had the lowest disabling injury rate at 0.31 per 100 person-years worked. The Well Servicing with Service Rigs sub-sector had the highest disabling injury rate at 4.32 per 100 person-years worked,

followed by the Drilling of Oil and Gas Wells sub-sector at 4.30 per 100 person-years worked.

In 2010, sprains, strains and tears was the most common nature of injury.

- Sprains, strains and tears continued to be the leading nature of injury, accounting for 43.8% of the disabling injury claims submitted in the Upstream Oil and Gas industries.
- The back (including spine and spinal cord) was the most commonly injured body part, accounting for 17.4% of all disabling injury claims.
- The primary sources of injury causing disabling injury claims were parts and materials, accounting for 21.4% of the disabling injury claims, followed by persons, plants, animals and minerals, 20.5%.
- In 2010, the two most common types of event or exposure, bodily reaction or exertion as well as contact with objects and equipment, accounted for 70.7% of disabling injury claims in the Upstream Oil and Gas industries.
- The median work days lost was 14, compared to the average for all sectors of the province, seven. The average days lost per claim was 35, compared to the average for all sectors in the province, 23 days lost per claim.

A few notes about this report:

- This report presents 2010 data beside 2009 data to help with comparisons. Additional historical data are presented where possible.
- Information presented in this report is based on incidents that occurred during 2010 and were accepted as lost-time or modified work claims by Workers' Compensation Board – Alberta (WCB) as of March 31, 2011.
- The person-years worked estimates in the *OID 2010 Upstream Oil and Gas Industries* report have been provided by the WCB back to 2006, thus previous years OID Upstream Oil and Gas industries report numbers and rates will not be comparable.
- Injury claim rates based on a small number of person-years worked are too volatile to make valid comparisons over time. Therefore, claim rates are not calculated when there are fewer than 40 person-years worked.
- Estimates of year-over-year change for rates presented in this report are calculated using unrounded figures and may not match those produced from rounded figures. Percentages displayed in tables may also not total 100, due to rounding.
- Throughout the report, the lost-time claim rate is the number of lost-time claims per 100 person-years worked, the disabling injury rate is the number of disabling injury claims per 100 person-years worked. Fatality rates are expressed as the number of fatalities per million person-years worked.
- Analyses by industry are based on WCB industry classification and aggregation. For more information see the industry rate manual on the WCB website.
- Analyses by occupation group are based on the National Occupational Classification (NOC). The NOC provides a standard list of occupations across the country. For more information see http://www5.hrsdc.gc.ca/NOC.
- Occupational injuries and diseases listed throughout this report are based on the Z795 Coding of Work Injury or Disease Information produced by the Canadian Standards Association (CSA) for categorizing occupational injury and disease. For more information see

  http://www.shopcsa.ca/onlinestore/GetCatalogItemDetails.asp?mat=2416404.
- Terms, definitions and formulas used throughout this report are described in Appendix A.

INDUSTRY SECTOR SUMMARY

In 2010, the lost-time claim rate for the Upstream Oil and Gas Industries was 0.50 per 100 person-years worked.

The Upstream Oil and Gas industries lost-time claim rate remained at 0.50 per 100 person-years worked in 2010. The disabling injury rate increased by 8.5%, to 1.72 per 100 person-years worked (see Table 1.1). The average lost-time claim rate for all sectors in the province was 1.41 per 100 person-years worked and the average disabling injury rate was 2.67 per 100 person-years worked.

The increase in the 2010 disabling injury rate for the Upstream Oil and Gas industries was the result of a greater increase in the number of disabling injury claims than the increase in the number of person-years worked. The number of lost-time claims increased by 3.7%, to 815 in 2010, and the number of disabling injury claims increased by 12.4%, to 2,805. The person-years worked increased by 3.6%. The largest sub-sector, Downhole and Other Oilfield Services, accounting for approximately 26.5% of person-years worked, displayed an increase of 10.7% in lost-time claims and 17.7% in disabling injury claims.

Table 1.1
Upstream Oil and Gas Industries – Alberta: 2009 - 2010

	2009	2010	% Change
Person-years worked	156,976	**162,678**	3.6%
Lost-time claims	786	**815**	3.7%
Lost-time claim rate	0.50	**0.50**	0.0%
Modified-work claims	2,179	**2,498**	14.6%
Lost-time claims involving modified work	470	**508**	8.1%
Disabling injury claims	2,495	**2,805**	12.4%
Disabling injury rate	1.59	**1.72**	8.5%
Days lost (LTC)	31,659	**28,442**	-10.2%
Transaction claim costs (LTC)	$14,814,905	**$13,974,697**	-5.7%

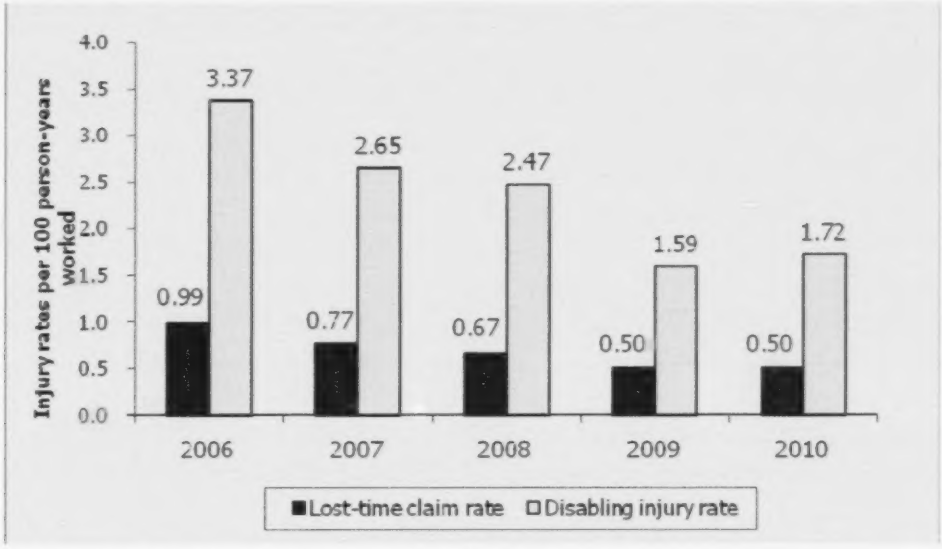
Data Source: WCB Data, Prepared by Data Development and Evaluation

Estimates of injury and disease severity are calculated using information on the number of days lost from work. The basic measures of severity are median days lost from work and average days lost from work. The efforts of employers to introduce modified work programs to integrate injured workers back into the workforce also has a positive impact on work days lost. In 2010, the median work days lost in the Upstream Oil and Gas industries was 14, compared to the provincial figure of seven. The average days lost per claim was 35 compared to the average for all sectors in the province, 23 days per claim.

Since 2006 (see Chart 1.1), the lost-time claim rate for the Upstream Oil and Gas industries decreased by 49.5%, greater than the average decrease seen for all sectors of the province, 37.3%. Since 2006, the disabling injury rate decreased by 49.0%. The average decrease in the disabling injury rate since 2006 for all sectors in the province was 32.4%.

Chart 1.1

Injury Rates for Upstream Oil and Gas Industries - Alberta: 2006 - 2010



Data Source: WCB Data, Prepared by Data Development and Evaluation

Rates by Employer Size

In the Upstream Oil and Gas industries, employers with 10 to 19 person-years worked had the highest lost-time claim rate at 1.25 per 100 person-years worked, followed by employers with 20 to 39 person-years worked, 1.01. Employers with 100 or more person-years worked had the lowest lost-time claim rate, 0.34 (see Table 1.2). Employers with 40 to 99 person-years worked and 20 to 39 person-years worked usually have the highest lost-time claim rate while employers with less than 10 person-years worked have the lowest.

Employers with 20 to 39 person-years worked had the highest disabling injury rate at 2.25 per 100 person-years worked, followed by employers with 10 to 19 person-years worked, 2.20 per 100 person-years worked. Employers with more than 100 person-years worked had a disabling injury rate almost four times higher than their lost-time claim rate. Low lost-time claim rates and high disabling injury rates can be indicative of proficient claims management. It may also be a reflection of larger employers having greater capacity to offer modified duties to injured workers than smaller employers.

Table 1.2

Lost-Time Claim and Disabling Injury Rate by Size of Employer - Alberta: 2010

Size of Employer	Lost-Time Claims	Disabling Injuries	Lost-time Claim Rate	Disabling injury Rate
Less than 10 person-years worked	112	158	0.69	0.97
10 to 19 person-years worked	72	127	1.25	2.20
20 to 39 person-years worked	77	171	1.01	2.25
40 to 99 person-years worked	87	257	0.74	2.17
100 or more person-years worked	405	2,027	0.34	1.68
Unspecified	62	65	N/A*	N/A*

*These are employers with no payroll information or with person-years worked equal to zero
Data Source: WCB Data, Prepared by Data Development and Evaluation

INDUSTRY SECTOR ANALYSIS

Over the past five years, the lost-time claims rates for the Upstream Oil and Gas sub-sectors went down.

Between 2006 and 2010, the Oilfield Trucking Services sub-sector had the highest lost-time claim rate, although it also displayed the second largest decrease in its lost-time claim rate since 2006, 55.2%. In 2010, its lost-time claim rate was 1.55 per 100 person-years worked. The Oilfield Maintenance and Construction sub-sector displayed the largest decrease in its lost-time claim rate since 2006, 69.7%. The Petroleum Producers/Exploration sub-sector had the lowest lost-time claim rate in 2010, 0.13 per 100 person-years worked (see Table 2.1).

Table 2.1
Lost-Time Claim Rate by Upstream Oil and Gas Sub-Sector — Alberta: 2006-2010

Sub-Sector	2006	2007	2008	2009	2010
Upstream Oil and Gas	0.99	0.77	0.67	0.50	**0.50**
Petroleum Producers/ Exploration	0.25	0.23	0.18	0.17	**0.13**
Oilfield Maintenance and Construction	2.38	1.91	1.07	1.66	**0.72**
Well Servicing with Service Rigs	1.23	1.05	1.01	0.79	**0.88**
Drilling of Oil and Gas Wells	1.60	1.20	1.12	0.68	**1.07**
Downhole and Other Oilfield Services	1.23	1.15	1.08	0.76	**0.82**
Oil Sands	0.17	0.25	0.21	0.21	**0.19**
Oilfield Trucking Services	3.46	1.93	2.09	1.72	**1.55**

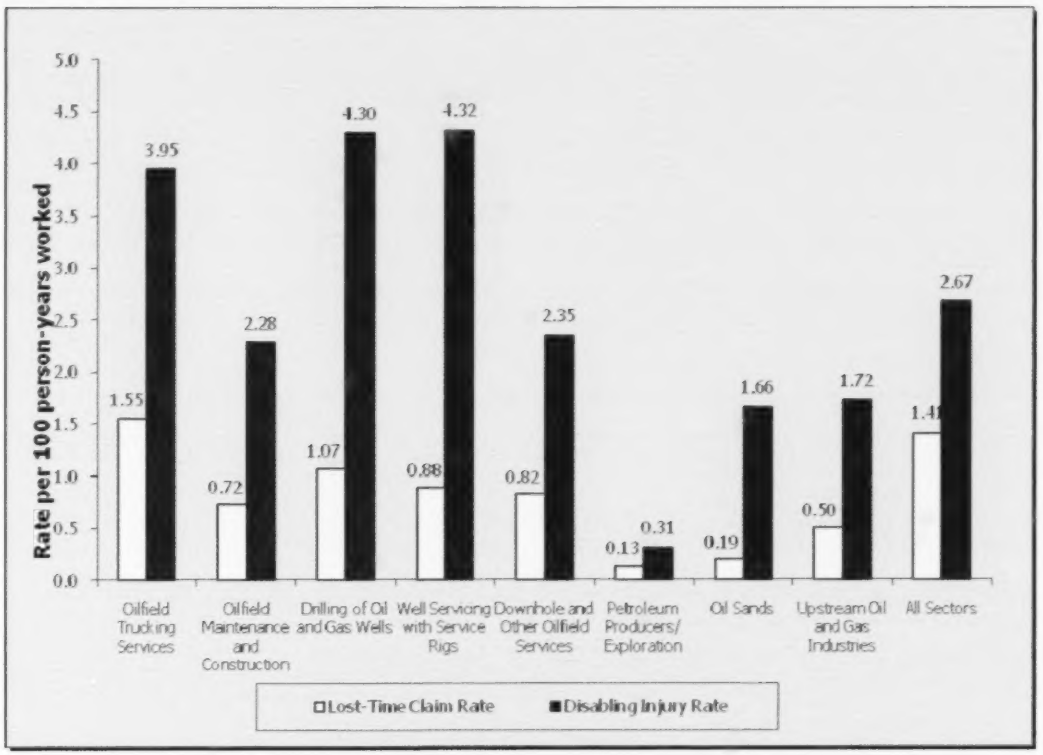
Data Source: WCB Data, Prepared by Data Development and Evaluation

By sub-sector, Upstream Oil and Gas industries display some of the lowest lost-time claim rates of all the sub-sectors in the province. They also display some of the highest disabling injury rates. For example, in 2010, the Well Servicing with Service Rigs sub-sector had a lost-time claim rate of 0.88 per 100 person-years worked, 37.6% lower than the provincial rate of 1.41 (see Chart 2.1).

In 2010, the Petroleum Producers/Exploration sub-sector had the lowest disabling injury rate of all Upstream Oil and Gas sub-sectors at 0.31 per 100 person-years worked. The Well Servicing with Service Rigs sub-sector had the highest disabling injury rate at 4.32 per 100 person-years worked, followed by the Drilling of Oil and Gas Wells sub-sector at 4.30.

Chart 2.1

Lost-Time Claim and Disabling Injury Rates by Upstream Oil and Gas Sub-Sector — Alberta: 2010



Data Source: WCB Data, Prepared by Data Development and Evaluation

Petroleum Producers/Exploration

In 2010, the lost-time claim rate in the Petroleum Producers/Exploration sub-sector decreased by 23.9% to 0.13 per 100 person-years worked, the lowest of all sub-sectors in the Upstream Oil and Gas industries. Over the last five years, the lost-time claim rate for this sub-sector has decreased by 48.7%, from 0.25 per 100 person-years worked in 2006, to 0.13 in 2010.

The sub-sector's disabling injury rate decreased by 28.0% in 2010, to 0.31 per 100 person-years worked and was the lowest of all sub-sectors (see Table 2.2).

Table 2.2
Petroleum Producers/Exploration — Alberta: 2009 - 2010

	2009	2010	% Change
Person-years worked	62,319	**63,926**	2.6%
Lost-time claims	105	**82**	-21.9%
Lost-time claim rate	**0.17**	**0.13**	**-23.9%**
Modified-work claims	225	**156**	-30.7%
Lost-time claims involving modified work	62	**40**	-35.5%
Disabling injury claims	268	**198**	-26.1%
Disabling injury rate	**0.43**	**0.31**	**-28.0%**
Days lost (LTC)	2,212	**1,976**	-10.7%
Transaction claim costs (LTC)	$1,270,712	**$1,490,337**	17.3%

Data Source: WCB Data, Prepared by Data Development and Evaluation

Oilfield Maintenance and Construction

In 2010, the lost-time claim rate in the Oilfield Maintenance and Construction sub-sector decreased by 37.9% to 0.72 per 100 person-years worked, from 1.17 in 2009. This was the result of the decrease in the number of lost-time claims. Lost-time claims decreased by 35.3% and person-years worked increased by 4.3%. Over the last five years, the lost-time claim rate for this industry has fluctuated between 0.72 per 100 person-years worked in 2010 and 2.38 in 2006.

The disabling injury rate decreased by 8.1% in 2010, to 2.28 per 100 person-years worked The number of disabling injury claims decreased by 4.1% to 208 in 2010 (see Table 2.3).

Table 2.3
Oilfield Maintenance and Construction — Alberta: 2009 - 2010

	2009	2010	% Change
Person-years worked	8,747	**9,120**	4.3%
Lost-time claims	102	**66**	-35.3%
Lost-time claim rate	**1.17**	**0.72**	**-37.9%**
Modified-work claims	165	**177**	7.3%
Lost-time claims involving modified work	50	**35**	-30.0%
Disabling injury claims	217	**208**	-4.1%
Disabling injury rate	**2.48**	**2.28**	**-8.1%**
Days lost (LTC)	3,782	**2,139**	-43.4%
Transaction claim costs (LTC)	$1,318,443	**$929,094**	-29.5%

Data Source: WCB Data, Prepared by Data Development and Evaluation

Well Servicing with Service Rigs

In 2010, the lost-time claim rate for the Well Servicing with Service Rigs sub-sector increased by 11.3% to 0.88 per 100 person-years worked. This was a result of lost-time claims increasing by a greater amount than the increase in person-years worked. Lost-time claims increased by 30.6% and person-years worked increased by 17.4%. Over the last five years, the lost-time claim rate for this industry has decreased by 28.6%, lower than the average decrease for all Upstream Oil and Gas industries, 49.5%, and lower than the average decrease for all sectors in the province, 37.3%.

In 2010, this sub-sector had the highest disabling injury rate in the Upstream Oil and Gas industries at 4.32 per 100 person-years worked, greater than the average rate for all industries in the province, 2.67 (see Table 2.4).

Table 2.4
Well Servicing with Service Rigs — Alberta: 2009 - 2010

	2009	2010	% Change
Person-years worked	6,195	**7,271**	17.4%
Lost-time claims	49	**64**	30.6%
Lost-time claim rate	**0.79**	**0.88**	**11.3%**
Modified-work claims	211	**297**	40.8%
Lost-time claims involving modified work	34	**47**	38.2%
Disabling injury claims	226	**314**	38.9%
Disabling injury rate	**3.65**	**4.32**	**18.4%**
Days lost (LTC)	1,760	**2,398**	36.3%
Transaction claim costs (LTC)	$672,208	**$744,224**	10.7%

Data Source: WCB Data, Prepared by Data Development and Evaluation

Drilling of Oil and Gas Wells

The Drilling of Oil and Gas Wells sub-sector experienced a 56.7% increase in the lost-time claim rate to 1.07 per 100 person-years worked in 2010, from 0.68 in 2009. This was a result of an increase in lost-time claims of 85.7% and an increase in person-years worked of 18.5%. Over the last five years, the lost-time claim rate for this sub-sector has decreased by 33.5%.

This sub-sector had a disabling injury rate of 4.30 per 100 person-years worked in 2010, higher than the average rate for all industries of the province, 2.67 (see Table 2.5).

Table 2.5
Drilling of Oil and Gas Wells — Alberta: 2009 - 2010

	2009	2010	% Change
Person-years worked	9,254	**10,964**	18.5%
Lost-time claims	63	**117**	85.7%
Lost-time claim rate	**0.68**	**1.07**	**56.7%**
Modified-work claims	245	**440**	79.6%
Lost-time claims involving modified work	38	**86**	126.3%
Disabling injury claims	270	**471**	74.4%
Disabling injury rate	**2.92**	**4.30**	**47.2%**
Days lost (LTC)	3,041	**3,545**	16.6%
Transaction claim costs (LTC)	$1,431,012	**$2,671,764**	86.7%

Data Source: WCB Data, Prepared by Data Development and Evaluation

Downhole and Other Oilfield Services

In 2010, the lost-time claim rate for Downhole and Other Oilfield Services sub-sector increased by 7.7% to 0.82 per 100 person-years worked from 0.76 in 2009. The number of lost-time claims increased by 10.7% and the person-years worked estimate increased by 2.7%. Over the last five years, the lost-time claim rate has decreased by 33.4%, from 1.23 in 2006 to 0.82 per 100 person-years worked in 2010.

The disabling injury rate increased by 14.6% to 2.35 per 100 person-years worked in 2010, from 2.05 in 2009. The number of disabling injury claim increased by 17.7% to 1,011 in 2010 (see Table 2.6).

Table 2.6
Downhole and Other Oilfield Services — Alberta: 2009 - 2010

	2009	2010	% Change
Person-years worked	41,957	**43,105**	2.7%
Lost-time claims	319	**353**	10.7%
Lost-time claim rate	**0.76**	**0.82**	**7.7%**
Modified-work claims	731	**872**	19.3%
Lost-time claims involving modified work	191	**214**	12.0%
Disabling injury claims	859	**1,011**	17.7%
Disabling injury rate	**2.05**	**2.35**	**14.6%**
Days lost (LTC)	15,459	**14,012**	-9.4%
Transaction claim costs (LTC)	$7,259,934	**$6,089,522**	-16.1%

Data Source: WCB Data, Prepared by Data Development and Evaluation

Oil Sands

In 2010, the lost-time claim rate for the Oil Sands sub-sector decreased from 0.21 per 100 person-years worked to 0.19, due to a 10.6% decrease in lost-time claims submitted. The disabling injury rate decreased to 1.66 per 100 person-years worked, from 2.04 in 2009. The lost-time claim rate was the second lowest of all sub-sectors in the Upstream Oil and Gas sector (see Table 2.7 and Chart 2.1).

Table 2.7
Oil Sands — Alberta: 2009 - 2010

	2009	2010	% Change
Person-years worked	22,633	**22,437**	-0.9%
Lost-time claims	47	**42**	-10.6%
Lost-time claim rate	**0.21**	**0.19**	**-9.9%**
Modified-work claims	452	**370**	-18.1%
Lost-time claims involving modified work	37	**40**	8.1%
Disabling injury claims	462	**372**	-19.5%
Disabling injury rate	**2.04**	**1.66**	**-18.8%**
Days lost (LTC)	890	**1,168**	31.2%
Transaction claim costs (LTC)	$1,297,755	**$1,004,941**	-22.6%

Data Source: WCB Data, Prepared by Data Development and Evaluation

Oilfield Trucking Services

In 2010, the lost-time claim rate for Oilfield Trucking Services sub-sector decreased by 9.7%, to 1.55 per 100 person-years worked and it remains the highest of all the Upstream Oil and Gas industries. The decrease in the rate was a result of the number of lost-time claims decreasing by 9.9%.

The disabling injury rate increased in 2010 by 20.0%, to 3.95 per 100 person-years worked, greater than the average for all industries of the province, 2.67.

Table 2.8
Oilfield Trucking Services — Alberta: 2009 - 2010

	2009	2010	% Change
Person-years worked	5,871	**5,855**	-0.3%
Lost-time claims	101	**91**	-9.9%
Lost-time claim rate	**1.72**	**1.55**	**-9.7%**
Modified-work claims	150	**186**	24.0%
Lost-time claims involving modified work	58	**46**	-20.7%
Disabling injury claims	193	**231**	19.7%
Disabling injury rate	**3.29**	**3.95**	**20.0%**
Days lost (LTC)	4,515	**3,204**	-29.0%
Transaction claim costs (LTC)	$1,564,840	**$1,044,814**	-33.2%

Data Source: WCB Data, Prepared by Data Development and Evaluation

SECTION 3

DEMOGRAPHICS OF INJURED WORKERS

Injured Worker Characteristics

In 2010, 44.5% of lost-time claims were from workers under 35 years of age. This same group also accounted for over half of the disabling injury claims. Young workers aged 15 to 24 accounted for 14.5% of lost-time claims, 21.3% of disabling injury claims (see Table 3.1) and for 9.3% of those in employment[1].

Table 3.1
Lost-Time Claims and Disabling Injury Claims by Age — Alberta: 2009 - 2010

Age	2009				2010			
	Lost-Time Claims	%	Disabling Injury Claims	%	Lost-Time Claims	%	Disabling Injury Claims	%
15-19 Years	17	2.2%	71	2.8%	26	3.2%	106	3.8%
20-24 Years	104	13.2%	413	16.6%	92	11.3%	491	17.5%
25-34 Years	231	29.4%	860	34.5%	245	30.1%	1011	36.0%
35-44 Years	185	23.5%	576	23.1%	201	24.7%	575	20.5%
45-54 Years	157	20.0%	406	16.3%	143	17.5%	405	14.4%
55-64 Years	69	8.8%	142	5.7%	86	10.6%	189	6.7%
65+ Years	23	2.9%	26	1.0%	22	2.7%	28	1.0%
Unspecified	0	0.0%	1	0.0%	0	0.0%	0	0.0%
Total	**786**	**100.0%**	**2,495**	**100.0%**	**815**	**100.0%**	**2,805**	**100.0%**

Data Source: WCB Data, Prepared by Data Development and Evaluation

In the Upstream Oil and Gas industries, men accounted for 95.5% of lost-time claims and 93.8% of disabling injury claims (see Table 3.2) while accounting for 79.1% of those employed[2] in these industries.

Table 3.2
Lost-Time Claims and Disabling Injury Claims by Gender — Alberta: 2009 - 2010

Gender	2009				2010			
	Lost-Time Claims	%	Disabling Injury Claims	%	Lost-Time Claims	%	Disabling Injury Claims	%
Women	58	7.4%	173	6.9%	**37**	**4.5%**	**167**	**6.0%**
Men	728	92.6%	2,321	93.0%	**778**	**95.5%**	**2,632**	**93.8%**
Unspecified	0	0.0%	1	0.5%	**0**	**0.0%**	**6**	**0.0%**
Total	786	100.0%	2,495	100.0%	**815**	**100.0%**	**2,805**	**100.0%**

Data Source: WCB Data, Prepared by Data Development and Evaluation

[1] Statistics Canada's Labour Force Survey (2010 Historical Review).

[2] Statistics Canada's Labour Force Survey (2010 Historical Review) for the Mining and Petroleum sector.

SECTION 4

INJURY AND DISEASE ANALYSIS

Being struck by objects and overexertion were the most common causes of lost-time claims in the Upstream Oil and Gas industries. Sprains, strains and tears continued to be the leading nature of injury with the back, including spine/spinal cord, being the most commonly injured body part.

Nature of Injury or Disease

The nature of injury is used to identify the physical characteristics of the injury or disease. In 2010, 87.6% of lost-time claims and 94.5% of disabling injury claims were caused by traumatic injuries and disorders. The three most common traumatic injuries and disorders were: sprains, strains and tears, fractures and dislocations, and other traumatic injuries and disorders (see Table 4.1).

Note 4.1
Throughout this section, the classifications used are based on the Canadian Standards Association (CSA) standards for categorizing occupational injury and disease information.

Table 4.1
Nature of Injury or Disease — Alberta: 2010

Nature of Injury	Lost-Time Claims	%	Disabling Injury Claims	%
Traumatic Injuries and Disorders	**714**	**87.6%**	**2,650**	**94.5%**
Sprains, Strains and Tears	300	36.8%	1,229	43.8%
Surface Wounds and Bruises	68	8.3%	396	14.1%
Fractures and Dislocations	158	19.4%	392	14.0%
Open Wounds	45	5.5%	222	7.9%
Burns	32	3.9%	82	2.9%
Other Traumatic Injuries and Disorders	111	13.6%	329	11.7%
Systemic Diseases and Disorders	**90**	**11.0%**	**138**	**4.9%**
Infectious and Parasitic Disorders	**0**	**0.0%**	**0**	**0.0%**
Neoplasms, Tumors and Cancer	**1**	**0.1%**	**1**	**<0.1%**
Symptoms, Signs and Ill-Defined Conditions	**1**	**0.1%**	**4**	**0.1%**
Multiple Diseases, Conditions and Disorders	**2**	**0.2%**	**2**	**<0.1%**
Other Diseases, Conditions and Disorders	**5**	**0.6%**	**8**	**0.3%**
Nature of Injury - Unknown	**2**	**0.2%**	**2**	**<0.1%**
Total	**815**	**100.0%**	**2,805**	**100.0%**

Data Source: WCB Data, Prepared by Data Development and Evaluation

Part of Body Injured

In 2010, the trunk was the most commonly injured body part associated with lost-time claims, accounting for 35.2% of all lost-time claims and 31.4% of disabling injury claims in the Upstream Oil and Gas industries. This was followed by the upper extremities and lower extremities. The upper extremities had a higher proportion of disabling injury claims than the lower extremities, but a lower proportion of lost-time claims (see Table 4.2).

Table 4.2
Part of Body Injured — Alberta: 2010

Part of Body Injured	Lost-Time Claims	%	Disabling Injury Claims	%
Trunk	**287**	**35.2%**	**881**	**31.4%**
Back, Including Spine, Spinal Cord	143	17.5%	488	17.4%
Other Trunk	144	17.7%	393	14.0%
Upper Extremities	**147**	**18.0%**	**845**	**30.1%**
Finger(s), Fingernail(s)	65	8.0%	433	15.4%
Wrist(s) and Hand(s) Except Finger(s)	40	4.9%	226	8.1%
Other Upper Extremities	42	5.2%	186	6.6%
Lower Extremities	**182**	**22.3%**	**667**	**23.8%**
Leg(s)	94	11.5%	299	10.7%
Ankle(s) and Foot (Feet) Except Toes	84	10.3%	354	12.6%
Other Lower Extremities	4	0.5%	14	0.5%
Head	**112**	**13.7%**	**210**	**7.5%**
Other Head Parts	93	11.4%	151	5.4%
Eye(s)	19	2.3%	59	2.1%
Multiple Body Parts	**66**	**8.1%**	**128**	**4.6%**
Neck, Including Throat	**12**	**1.5%**	**52**	**1.9%**
Body Systems	**9**	**1.1%**	**22**	**0.8%**
Total	**815**	**100.0%**	**2,805**	**100.0%**

Data Source: WCB Data, Prepared by Data Development and Evaluation

Source of Injury or Disease

The source of injury or disease describes the object or substance that the worker came in contact with resulting in an injury or disease. In 2010, the primary sources of injury causing lost-time claims in the Upstream Oil and Gas industries were persons, plants, animals and minerals, accounting for 18.8% of all lost-time claims, structures and surfaces, 16.6%, and parts and materials, 16.6%. For disabling injury claims, parts and materials was the injury category with the highest proportion, 21.4%. This was followed by persons, plants, animals and minerals, 20.5% (see Table 4.3).

Table 4.3
Source of Injury or Disease — Alberta: 2010

Source of Injury	Lost-Time Claims	%	Disabling Injury Claims	%
Persons, Plants, Animals and Minerals	**153**	**18.8%**	**575**	**20.5%**
Person-Injured or Ill Worker	138	16.9%	533	19.0%
Minerals - Metallic or Nonmetallic (except fuel)	7	0.9%	20	0.7%
Person-Other Than Injured or Ill Worker*	4	0.5%	12	0.4%
Other Persons, Plants, Animals & Minerals	4	0.5%	10	0.4%
Structures and Surfaces	**135**	**16.6%**	**412**	**14.7%**
Parts and Materials	**135**	**16.6%**	**599**	**21.4%**
Vehicles	**108**	**13.3%**	**256**	**9.1%**
Tools, Instruments and Equipment	**77**	**9.4%**	**372**	**13.3%**
Hand Tools - Nonpowered	30	3.7%	175	6.2%
Hand Tools - Powered	7	0.9%	20	0.7%
Other Tools and Equipment	40	4.9%	177	6.3%
Containers**	**40**	**4.9%**	**132**	**4.7%**
Machinery	**26**	**3.2%**	**105**	**3.7%**
Chemicals and Chemical Products	**26**	**3.2%**	**61**	**2.2%**
Furniture and Fixtures	**11**	**1.3%**	**31**	**1.1%**
Other Sources	**94**	**11.5%**	**217**	**7.7%**
Source of Injury - Unknown	**10**	**1.2%**	**45**	**1.6%**
Total	**815**	**100.0%**	**2,805**	**100.0%**

*Persons – other than injured or ill worker: classifies workplace injuries or illnesses inflicted by family members as well as non-family relations, including co-workers, former co-workers, and patients.
**Containers: classifies receptacles that are commonly used to hold, store or carry materials (examples: dishes, cups and glasses, luggage, etc.).
Data Source: WCB Data, Prepared by Data Development and Evaluation

Type of Event or Exposure

The type of event or exposure describes the incident or event that occurred at the time of the exposure that directly resulted in the injury or disease. In 2010, the two most common types of event or exposure, bodily reaction or exertion, and contact with objects and equipment, comprised 58.4% of lost-time claims and 70.7% of disabling injury claims in the Upstream Oil and Gas industries (see Table 4.4).

Table 4.4
Type of Event or Exposure — Alberta: 2010

Type of Event or Exposure	Lost-Time Claims	%	Disabling Injuries	%
Contact with Objects or Equipment	**201**	**24.7%**	**975**	**34.8%**
Struck by Object	102	12.5%	416	14.8%
Caught in Object	70	8.6%	379	13.5%
Struck against Object	17	2.1%	111	4.0%
Rubbed or Abraded	5	0.6%	33	1.2%
Other Contact with Object/Equipment	7	0.9%	36	1.3%
Bodily Reaction or Exertion	**275**	**33.7%**	**1,008**	**35.9%**
Overexertion	121	14.8%	420	15.0%
Bodily Reaction*	110	13.5%	425	15.2%
Repetitive Motion	13	1.6%	64	2.3%
Other Bodily Reaction/Exertion	31	3.8%	99	3.5%
Falls	**150**	**18.4%**	**435**	**15.5%**
Fall on Same Level	91	11.2%	266	9.5%
Fall to Lower Level	50	6.1%	136	4.8%
Other Falls	9	1.1%	33	1.2%
Transportation Accidents	**80**	**9.8%**	**169**	**6.0%**
Exposure to Harmful Substances	**99**	**12.1%**	**189**	**6.7%**
Fires and Explosions	**5**	**0.6%**	**6**	**0.2%**
Assaults and Violent Acts	**4**	**0.5%**	**10**	**0.4%**
Assaults and Violent Acts by Person(s)	3	0.4%	7	0.2%
Other Assaults and Violent Acts	1	0.1%	3	0.1%
Other Events or Exposures	**0**	**0.0%**	**0**	**0.0%**
Type of Event - Unknown	**1**	**0.1%**	**13**	**0.5%**
Total	**815**	**100.0%**	**2,805**	**100.0%**

*Bodily reaction: injuries or illnesses resulting from a single incident of free bodily motion which imposed stress or strain on some part of the body.
Data Source: WCB Data, Prepared by Data Development and Evaluation

Days-lost due to Disability

Days-lost due to disability[3] is intended to show the severity of the effects of occupational injury and disease, as reflected by the number of days off work. However, efforts of employers to introduce modified work programs to integrate injured workers more quickly back into the workforce can have a positive impact on workdays lost.

In 2010, 31.6% of lost-time claims resulted in days-lost of 10 days or less. Claims with one to five days-lost represented 20.2% of lost-time claims, and six to 10 days, 11.4%. 21.6% of lost-time claims in 2010 resulted in 51 days or more lost from work (see Table 4.5). For all sectors in the province, 13.9% of claimants were unable to work for 51 days or more.

Table 4.5
Days-lost due to Disability — Comparison 2010

Days-lost due to Disability	% of Upstream Oil and Gas Industries' Lost-Time Claims	% of Lost-Time Claims in the Province
1-5 Days	20.2%	37.9%
6-10 Days	11.4%	13.6%
11-15 Days	8.1%	7.5%
16-20 Days	6.5%	4.9%
21-30 Days	9.2%	6.5%
31-40 Days	5.5%	4.7%
41-50 Days	5.4%	3.5%
51 Days or More	21.6%	13.9%
Unspecified	12.0%	7.4%

Data Source: WCB Data, Prepared by Data Development and Evaluation

[3] The days-lost refers to the length of time, in days, for which the worker receives wage compensation from the WCB.

OCCUPATIONAL FATALITIES

In 2010, the WCB accepted 16 fatalities in the Upstream Oil and Gas Industries, accounting for 11.8% of the 136 fatalities in the province.

In 2010, five of fatalities accepted by WCB were motor vehicle incidents, nine were workplace incidents and two were occupational disease fatalities in the Upstream Oil and Gas Industries (see Table 5.1).

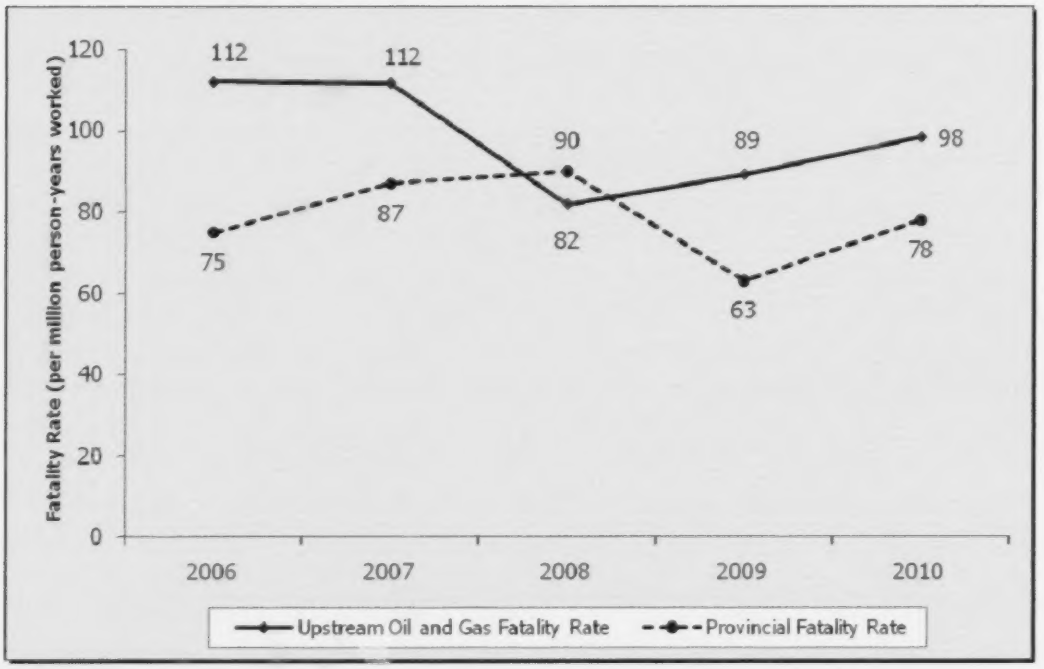
Table 5.1
Types of Occupational Fatalities Accepted by the WCB – Alberta for the Upstream Oil and Gas Industries: 2002 - 2010

Year	Motor Vehicle Incident		Workplace Incident		Occupational Disease		Total
	Number of Fatalities	%	Number of Fatalities	%	Number of Fatalities	%	Number of Fatalities
2002	7	38.9%	5	27.8%	6	33.3%	18
2003	10	47.6%	6	28.6%	5	23.8%	21
2004	5	33.3%	7	46.7%	3	20.0%	15
2005	5	41.7%	4	33.3%	3	25.0%	12
2006	10	58.8%	4	23.5%	3	17.6%	17
2007	9	50.0%	4	22.2%	5	27.8%	18
2008	8	57.1%	6	42.9%	0	0.0%	14
2009	3	21.4%	9	64.3%	2	14.3%	14
2010	**5**	**31.3%**	**9**	**56.3%**	**2**	**12.5%**	**16**
Total	**62**	**42.8%**	**54**	**37.2%**	**29**	**20.0%**	**145**

Data Source: WCB Data, Prepared by Data Development and Evaluation

The fatality rate provides an estimate of the number of fatalities in a particular year compared to the size of the working population in a particular year. It is calculated by dividing the number of accepted fatalities in the year by the number of estimated person-years worked. The result is expressed as fatalities "per million person-years worked." The 2010 fatality rate was 98 fatalities per million person-years worked (see Chart 5.1). The fatality rate for all sectors in the province in 2010 was 78 fatalities per million person-years worked.

Chart 5.1
Fatality Rate for the Upstream Oil and Gas Industries: 2006-2010



Data Source: WCB Data, Prepared by Data Development and Evaluation

Between 2006 and 2010, the WCB accepted 79 fatalities in the Upstream Oil and Gas industries. The Downhole and Other Oilfield Services sub-sector had the highest with 29 accepted fatalities, accounting for 36.7% of total fatalities (see Table 5.2).

Table 5.2
Upstream Oil and Gas Occupational Fatalities Accepted by the WCB by Sub-Sector – Alberta: 2006 - 2010

Sub-Sector	2006	2007	2008	2009	2010	Number of Fatalities	%
Downhole and Other Oilfield Services	8	5	6	5	**5**	29	36.7%
Petroleum Producers/Exploration	2	5	0	1	**3**	11	13.9%
Drilling of Oil and Gas Wells	1	1	4	1	**5**	12	15.2%
Oilfield Trucking Service Rigs	4	4	2	1	**1**	12	15.2%
Well Servicing with Service Rigs	0	2	2	0	**1**	5	6.3%
Oil Sands	1	0	0	4	**0**	5	6.3%
Oilfield Maintenance and Construction	1	1	0	2	**1**	5	6.3%
Upstream Oil and Gas Industries	**17**	**18**	**14**	**14**	**16**	**79**	**100.0%**

Data Source: WCB Data. Prepared by Data Development and Evaluation

CERTIFICATE OF RECOGNITION

A Certificate of Recognition (COR) is given to employers who develop health and safety programs that meet established standards. Certificates are jointly issued by Certifying Partners and E&I.[4]

In 2010, 9.5% of Upstream Oil and Gas industries' employers were COR holders. These employers represented 74.5% of the total person-years worked in the Upstream Oil and Gas industries. The Well Servicing with Service Rigs industry had the highest proportion of person-years worked certified, 93.3%. For the Well Servicing with Service Rigs industry, 33.9% of employers had valid CORs in 2010 (see Table 6.1).

Table 6.1
Employers With Valid COR — Alberta: 2010

	% of Total Employers Certified	% of Total Person-Years Certified
Upstream Oil and Gas industries	**9.5%**	**74.5%**
Downhole and Other Oilfield Services	10.9%	74.8%
Drilling of Oil and Gas Wells	22.9%	96.1%
Oilfield Maintenance and Construction	20.2%	81.9%
Oilfield Trucking Services	21.5%	85.4%
Petroleum Producers/Exploration	2.2%	60.9%
Oil Sands	4.0%	89.7%
Well Servicing with Service Rigs	33.9%	93.3%

Data Source: WCB Data, Prepared by Data Development and Evaluation

The lost-time claim rate for COR holders in Upstream Oil and Gas industries in 2010 was 0.51 per 100 person-years worked, a decrease of 5.6% from 2009. The rate for non-COR holders decreased by 4.1% to 0.47 per 100 person-years worked (see Table 6.2).

Comparing COR holders against all non-COR holders provides useful information about each group, although it does not compare like-with-like. A COR is given to employers who develop health and safety programs that meet established standards, with this group seeing continued improvement in its lost-time claim rates. Some non-COR holders have good programs in place above this standard, whereas others do not. This makes evaluating improving health and safety trends less clear for non-COR holders.

[4] For more information on the COR program visit http://www.employment.alberta.ca/SFW/334.html

The two groups also differ significantly in employer structure and size. COR holders account for 9.5% of employers in the Upstream Oil and Gas industries (Table 6.1) but 74.5% of the person-years worked. Analysis by employer size for the Upstream Oil and Gas industries (Table 1.2) show smaller employers tend to have better health and safety performance than medium-sized employers. The pattern of claim rates by employer size differs depending on the measure. Large employers have one of the lowest lost-time claim rates and highest disabling injury rates. This is indicative of having health and safety systems in place and more proficient claims management. It also reflects the greater capacity of large employers to offer modified duties to an injured worker. Smaller employers can find it easier to adjust working practices or introduce set standards, due in part to the size of their operations. The higher levels of health and safety performance observed for small employers also reflects the different type of work undertaken by employers of different sizes.

Table 6.2

Lost-Time Claim and Disabling Injury Rates for Upstream Oil and Gas COR Holders — Alberta: 2009 and 2010

Employer	Year	Number of Accounts	Lost-Time Claims	Disabling Injury Claims	Lost-Time Claim Rate	Disabling Injury Rate	Change in Lost-Time Claim Rate	Change in Disabling Injury Rate
COR	2009	1,563	559	1,869	0.54	1.79	-5.6%	15.1%
	2010	1,590	619	2,483	0.51	2.06		
Non-COR	2009	14,525	256	603	0.49	1.15	-4.1%	-32.2%
	2010	15,061	196	322	0.47	0.78		

Data Source: WCB Data, Prepared by Data Development and Evaluation

REFERENCES

Alberta Employment and Immigration. "Occupational Injuries and Diseases in Alberta 2010 Summary"

Association of Workers' Compensation Boards of Canada. National Work Injury and Disease Statistics for 2009, December 2010.

Canadian Standards Association. Z795-03: Coding of Work Injury or Disease Information, June 2003.

Statistics Canada. "Guide to the Labour Force Survey" 2010.

Statistics Canada Labour Force Survey for the Mining and Petroleum sector.

Statistics Canada's Labour Force Survey 2010 Historical Review.

APPENDIX A: TERMS, DEFINITIONS AND FORMULAS

Lost-Time Claim

A lost-time claim (LTC) is a claim for an occupational injury or disease that causes the worker to have time away from work beyond the day of injury. Included are claims receiving reimbursement of full or partial lost wages due to occupational illness or injury, or payment for permanent loss of function.

Modified Work Claim

A modified work claim is a claim for an occupational injury or disease where a worker had their normal work duties altered to enable them to remain working without losing time from work. Also included are claims where injured workers are helped back into the workplace with modified duties after time lost due to injury or disease.

Disabling Injury Claim

Disabling injury (DI) claims combine both the lost-time and modified work concepts to produce an overall figure where an occupational injury or disease disables the worker causing either time-lost from work or for their normal work duties to be modified.

Person-Years Worked

Person-years worked are estimates provided by the WCB. One person-year is equivalent to one full-time worker working for one year, and can be assumed to equal 2,000 hours worked. The person-years worked estimates in the *OID 2010 Upstream Oil and Gas industries* report have been provided by the WCB back to 2006, thus previous years OID Upstream Oil and Gas industries report numbers and rates will not be comparable.

Lost-Time Claim Rate

The lost-time claim rate is calculated by dividing the number of lost-time claims by the person-years worked estimate, and multiplying the result by 100. The lost-time claim rate represents the probability or risk of an injury or disease to a worker during a period of one-year work, which will result in time lost from work. Comparisons of lost-time claim rates between industries, or between years, can be used to indicate increases, decreases, or differences in this risk.

$$\text{LTC Rate} = \frac{\text{Number of LTC's}}{\text{Person-years worked}} \times 100$$

Disabling Injury Rate

The disabling injury rate is calculated by dividing the number of disabling injury claims by the person-years worked estimates, and multiplying the result by 100. The disabling injury rate represents the probability or risk of a

disabling injury or disease to a worker during a period of one year of work. The disabling injury rate is similar to the LTC rate although it covers a broader range of injuries, including those that are less severe in nature (do not require time away from work). The rate represents the number of claims per 100 person-years worked and includes claims made for both lost-time and modified work.

$$\text{Disabling Injury Rate} = \frac{\text{Number of DI's}}{\text{Person-years worked}} \times 100$$

Days-lost

The days-lost is the number of days following the injury or disease for which the worker was disabled and unable to perform normal work duties. This information is obtained for this report from data on compensation days paid on each claim from the WCB. Alberta Employment and Immigration obtains these data on March 31 of the year following the claim year, and does not update the information, even though many injured workers continue to be disabled beyond this date. As a result, the days-lost information reported here underestimates the true impact of lost-time injury and disease, although it provides a consistent method for reporting and observing trends in days-lost.

WCB Accepted Fatality

An occupational fatality is the death of a worker which resulted from a work-related incident or exposure and which has been accepted by the WCB for compensation. A fatality is counted in the year it is accepted.

Fatality Rate

The fatality rate is calculated by dividing the number of accepted fatalities by the person-years worked estimate and multiplying the result by one million. The result is expressed as fatalities per million person-years worked. Fatalities that are found under the jurisdiction of the Government of Canada are excluded before the calculation of the fatality rate.

$$\text{Fatality Rate} = \frac{\text{Number of Fatalities}}{\text{Person-years worked}} \times 1{,}000{,}000$$

Labour Force Survey

The Labour Force Survey (LFS) is a household survey carried out monthly by Statistics Canada. The objectives of the LFS have been to divide the working-age population into three mutually exclusive classifications (employed, unemployed, and not in the labour force) and to provide descriptive and explanatory data on each of these categories. Data from the survey provide information on major labour market trends such as shifts in employment across industrial sectors, hours worked, labour force participation and unemployment rates.

For the most part, annual LFS data has been analyzed alongside injury and disease information to aid the understanding of injury risk or frequency by worker type. The LFS uses a different industry classification from WCB,

although there are similarities in structure. Where possible, the two data sources

are used comparably and proportions (of totals) have been used to evaluate information generated from both sources. Using proportions attempts to overcome obvious distortions in the numbers in employment from both sources, although the impact on the proportions from industry coverage differences is unclear. In certain instances, monthly LFS micro-data files have been combined

and used to produce proportion estimates for the whole year for particular sub-groups of the population.

For further information on the LFS, please see
http://www.employment.alberta.ca/BI/67.html

APPENDIX B: UPSTREAM OIL AND GAS INDUSTRIES WCB INDUSTRY CODES

1. Petroleum Producers/Exploration

06300 – Oil and Gas Exploration and Development – Upstream Operations

09200 – Seismic Survey

2. Oilfield Maintenance and Construction

06304 – Oilfield Maintenance and/or Construction (Upstream of Processing Plants)

3. Well Servicing with Service Rigs

09903 – Well Servicing with Service Rigs

4. Drilling of Oil and Gas Wells

09600 – Drilling of Oil and Gas Wells

5. Downhole and Other Oilfield Services

06305 – Field Production Operators

06306 – Vacuum Removal of Waste – Industrial, Commercial and Oilfield

09201 – Shot Hole Drilling

09900 – Mud Logging

09902 – Pressure Cleaning Services

09904 – Rathole Drilling and Service Rig Anchoring

09911 – Oilfield Downhole Services

09915 – Well Casing Services

09921 – Servicing Christmas Trees on Oil Wells by Means of a Tree Saver

09927 – Liquid Waste Treatment and Disposal

6. Oil Sands

06600 – Oil Sands Operations

06601 – Research and Development, Oilsands and Heavy Oil Recovery

7. Oilfield Trucking Services

50720 – Oilfield Trucking Services

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Email: whs@gov.ab.ca

Employment and Immigration website:

http://employment.alberta.ca

Work Safe Alberta website:

www.worksafe.alberta.ca

Occupational Health and Safety Contact Centre:

Telephone: 780-415-8690, toll free by calling 1-866-415-8690

http://www.employment.alberta.ca/SFW/2874.html

Certificate of Recognition (COR) Program:

http://www.employment.alberta.ca/SFW/334.html